REMARKS

This amendment is responsive to the Office Action of February 3, 2010. Reconsideration and allowance of claims 1-10, 12, 13, 15-19, 21-27, 30, 32-40, 42, 43, 46-49, 52-55, 57, 58, 61-64, 66, 67, 70-72, and 74 are requested.

Claims 1-7, 9, 10, 12, 13, 15-19, 32-38, 40, 42, 43, 46-48, 66, 67, and 70 stand rejected under 35 U.S.C. § 103 over Taylor (US 5,950,629) as modified by Niemeyer (US 6,424,885).

Claims 8 and 39 stand rejected under 35 U.S.C. § 103 over Taylor as modified by Niemeyer, as further modified by Sumanaweera (US 6,443,894).

Claims 21, 22, 25-27, 30, 49, 52-54, 57, 58, 61-64, 71, 72, and 74 stand rejected under 35 U.S.C. § 103 over Taylor as modified by Niemeyer, as further modified by Wodicka (US 5,445,144).

Claims 66, 67, 70-72, and 74 stand rejected under 35 U.S.C. § 101.

35 U.S.C. § 101

Claims 66, 67, 70-72, and 74 have been amended to specify a tangible computer-readable medium (as opposed to a non-tangible or transitory computer-readable medium). With this amendment, it is submitted that all claims comply with the requirements of 35 U.S.C. § 101.

The Claims Distinguish Patentably Over the References of Record

In the Response to Arguments, the Examiner asserts that column 15, lines 8-35 and column 16, lines 34-67 of **Taylor** disclose a haptic device. By contrast, column 15, lines 8-15 and column 16, lines 34-67 of Taylor are directed to a surgical robot which performs computer-controlled surgery. Taylor further enables the operator to disconnect from the machine control to enable the operator to manually move the manipulator **144**. When the manipulator is disengaged from the machine control, the operator can manually use the device and feel the resistance as the end effector moves through anatomical tissue to the target. In this manual or passive mode, the force feedback which the surgeon feels is from the interaction of the end effector and the patient's anatomy, not force feedback from a haptic system.

The Examiner concedes that Taylor fails to disclose various limitations set forth in **claim 1** and refers the applicant to **Neimeyer**, particularly column 31, lines 58-67, and column 32, lines 1-7, which the Examiner asserts relates to a virtual haptic object. By contrast, this section of Neimeyer is concerned with "singularity" issues related to the mechanical structure of the apparatus. As explained in columns 32 and 33 of Neimeyer, singularities relate, for example, to the differences in motion and motion speed attributable to the displacement of the end effector **58** relative to the fulcrum **49**. Thus, the referenced section of Neimeyer relates to correcting mechanical issues with the apparatus rather than with a virtual haptic object and the referenced distance has to do with displacement from a fulcrum and not distance relative to the virtual haptic object.

For the reasons set forth above and previously presented, it is submitted that **claim 1** and **claims 10, 12, and 16-18 dependent therefrom** distinguish patentably and unobviously over the references of record.

As previously pointed out, **claim 2** focuses on the embodiments of Figures 6A-6C. The Office Action fails to address or rebut the arguments presented in the prior Amendment, particularly that neither Taylor nor Neimeyer teach or fairly suggest removing tissue from a curved anatomical object while maintaining sharp edges. Accordingly, it is submitted that **claim 2** and **claims 3-9 and 13 dependent therefrom** distinguish patentably and unobviously over the references of record.

Regarding **claim 15**, neither Taylor nor Neimeyer disclose nor suggest allowing the surgeon to physically manipulate the position of a tool coupled to the haptic device. Neimeyer uses master/slave devices. In Taylor, the user can only move the manipulator when it is released along one or more degrees of freedom from surgical robot control. Accordingly, it is submitted that **claim 15** and **claim 19 dependent therefrom** distinguish patentably over the references of record.

Regarding **claim 21**, the Examiner refers the applicant to **Wodicka**, column 14, lines 42-45. Claim 21 calls for providing both an audio signal and force feedback. By contrast, the applied references teach that either, but not both, of audio and force feedback should be provided. Moreover, claim 21 calls for the audio signal to provide an audio indication of the scalar distance between the current position of the tool and the virtual guide surface. By contrast, column 14, lines 42-45 of

Wodicka call for sounding an alarm and determines whether the ETT insertion distance is outside of the safety zone boundaries. Such an alarm is indicative of crossing a safety zone boundary, but is not indicative of a scalar distance between the current position of the tool and a virtual guide surface. Accordingly, it is submitted that **claim 21** and **claims 22-27 and 30** distinguish patentably and unobviously over the references of record.

Claim 32 calls for a haptic device to generate an output force or torque which varies with the current scalar distance between the surgical tool and the object of interest to provide an indication of said current scalar distance. Column 13, lines 45-52 of Taylor referenced by the Examiner does not provide the operator with an output which indicates the current scalar distance between the surgical tool and the object of interest. While this section of Taylor lists a variety of aids, none of these aids are identified as indicating this changing scalar distance. Accordingly, it is submitted that **claim 32** and **claims 33-37, 40, 42, 46-49, and 64 dependent therefrom** distinguish patentably over the references of record.

Claim 38 calls for providing a human-readable display indicating the scalar distance between the current tool position and the object of interest, the display being either numerical or graphical. Taylor does not provide a numerical or graphical display of distance.

Accordingly, it is submitted that **claim 38** and **claim 43 dependent therefrom** distinguish patentably and unobviously over the references of record.

Claim 52 calls for providing an indication of a current scalar distance between the medical tool and a virtual cutting boundary. Taylor and the other references of record do not disclose or fairly teach displaying an indication of such a distance. Accordingly, it is submitted that **claim 52** and **claims 53-55, 57, 58, and 61-63 dependent therefrom** distinguish patentably over the references of record.

Claim 66 calls for providing a changing indication of a scalar distance between a current position of a surgical tool and a virtual cutting boundary. Taylor, at column 13, lines 45-52, referenced by the Examiner, does not provide an indication of such a distance. Accordingly, it is submitted that **claim 66** and **claims 67, 70-72, and 74 dependent therefrom** distinguish patentably over the references of record.

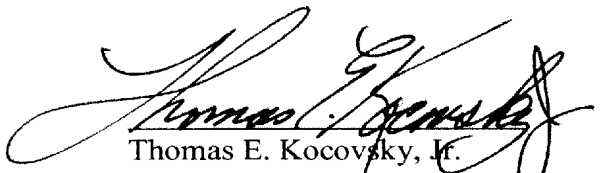
CONCLUSION

For the reasons set forth above, it is submitted that all claims distinguish patentably over the references of record and meet all statutory requirements. An early allowance of all claims is requested.

In the event the Examiner considers personal contact advantageous to the disposition of this case, the Examiner is requested to telephone Thomas Kocovsky at 216.363.9000.

Respectfully submitted,

FAY SHARPE LLP



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